FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST 5049
SYMONS FROZEN FOODS, INC.

2/14/2005

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST 5049. The Department of Ecology (Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the state of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law [Revised Code of Washington (RCW) 90.48.080 and 90.48.162] requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the state include procedures for issuing permits [Chapter 173-216 (Washington Administrative Code)] and water quality criteria for groundwaters (Chapter 173-200 WAC). They also establish requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant	Symons Frozen Foods Inc.
Facility Name and Address	619 Goodrich Road Centralia, WA 98531
Type of Facility	Food Processing, Frozen Vegetables.
Type of Treatment	Screening followed by land disposal of liquid effluent.
Discharge Location	Latitude: 46° 45' 25" N Longitude: 123° 00' 37" W.
Legal Description of Application Area	Field 1, 12 Acres, Section 25, township 15N, range 3W Field 2, 11.5 Acres, Section 25, township 15N, range 3W Field 3 83 Acres, Section 25/24, township 15N, range 3W Field 4 42.5 Acres, Section 26, township 15N, range 3W Field 5 33 Acres, Section 25/26, township 15N, range 3W Field 6 43.5 Acres, Section 26, township 15N, range 3W Field 7 30.5 Acres, section 23, township 15N, range 3W Facility: Latitude: 46º 45' 30" N. Longitude: 123º 00' 30" W.
Contact at Facility	Name: Andrew Lucier Telephone #: (360) 736-1321
Responsible Official	Name: Andrew Lucier Title: General Manager Address: 619 Goodrich Road, Centralia, WA 98531 Telephone #: (360) 736-1321 FAX # (360) 736-6328

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

This facility was first issued a permit in 1960. Essentially the same permit was reissued until 1981, when the facility was notified that the existing permit would remain in effect until further notice. The next permit was issued on July 29, 1995, after new regulations for discharge to ground were promulgated. The current permit was issued on May 10, 2001 and modified on April 28, 2003.

INDUSTRIAL PROCESSES

Symons Frozen Foods processes and freezes blueberries, corn, lima beans, other kinds of beans and green peas. Production is seasonal, coinciding with the harvesting season from June until October. During the season, the facility operates 24 hours a day, 6 days a week for approximately 18 weeks. The only chemicals stored on site are janitorial chemicals. The source of the process water is from wells on site. Water is used to clean the vegetables for packing. Water use in 2003 was approximately 45 million gallons. Water is screened before being applied to land.

TREATMENT PROCESSES

The wastewater discharge from this site is screened and spread on adjacent fields for treatment. One hundred and thirty-one and eight-tenths acres of disposal field are owned by the Permittee.

DISTRIBUTION SYSTEM

The area available for disposal of wastewater is 256 acres. The soils in this disposal area are described in the Soil Survey of Lewis County, Soil Conservation Service, May 1987, as Newberg Fine Sandy Loam west of the slough, and Nisqually Loamy Sand to the east of the slough. Both these soils are quite well drained. There is no need for winter application, since production ceases in October. An irrigation and crop management plan is required in the existing and proposed permit. Symons Frozen Foods has a water right (No. 567500) for the wells it uses for process water. The crop proposed is blueberries on field 1 and grass for hay production or pasturage on the remainder.

GROUND WATER

Symons Frozen Foods has characterized the hydrogeology of the application areas. The sources of information used in the characterization consisted of 1) regional hydrogeologic published literature, 2) well logs on file with Department of Ecology and 3) six onsite monitoring wells.

A shallow, water-table aquifer continuously underlies the application areas and is the target aquifer for the goundwater monitoring program at SFF. The aquifer consists of silt, sand, and sand and gravel deposits that represent alluvium of the Chehalis River and outwash deposits of the Vashon glaciation. The aquifer is generally about 50 feet thick and overlies a fine-grained aquitard thought to represent the Lincoln Formation. The depth to water is about 10-20 feet below the ground surface and fluctuates seasonally in response to variations of infiltrated precipitation, wastewater applications and stages of the Chehalis River. The aquifer is hydraulically connected to the Chehalis River and the groundwater flow direction is generally toward the northwest.

PERMIT STATUS

The previous permit for this facility was issued on May 10, 2001.

An application for permit renewal was submitted to the Department on April 19, 2004, and was accepted by the Department on, August 30, 2004.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

Water collected from the wells and tested without filtration exceeded the permit limits for iron and manganese. This exceedance was noted in wells where waste water was never applied. Since limits are not established in this permit pending further data, this exceedance is moot.

The facility exceeded the nitrogen application limit of 150 pounds/acre every year of the previous permit cycle. The facility has proposed a number of operational improvements for wastewater applications including increasing the application area and more intensive crop management. Continue monitoring of soil and groundwater will verify whether the wastewater applications pose a threat to groundwater quality.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in discharge monitoring reports. The proposed wastewater discharge prior to infiltration or land application is characterized for the following parameters:

Table 1: Wastewater Characterization

Parameter	Average Concentration	Maximum Concentration
BOD_5, mg/L	5938	10700
Total Dissolved Solids, mg/L	4233	6200
Ammonia, mg/L	10.4	22.2
pH, S.U.	5.9	6.74
Nitrate+Nitrite -N, mg/L	.5	1
Total Kjeldahl Nitrogen, mg/L	197.1	417
Ortho-phosphate-P, mg/L	32.3	51
Total Phosphate –P, mg/L	39.2	63
Calcium, mg/L	17.7	21.8
Chloride, mg/L	30.5	40
Magnesium, mg/L	14.2	19.6
Potassium, mg/L	177.6	271
Sodium, mg/L	8.5	9.01
Sulfate, mg/L	23	35
Manganese, mg/L	0.2	0.385

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The permit also includes limitations on the quantity and

quality of the wastewater applied to the spray fields that have been determined to protect the quality of the groundwater. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). The following permit limitations are necessary to satisfy the requirement for AKART: None

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground water including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the ground water quality standards. The goal of the ground water quality standards is to maintain the highest quality of the State's ground water and to protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to ground water [WAC 173-200-010(4)]. This goal is achieved by the following:

1. Requiring that AKART (all known available and reasonable methods of prevention, control and treatment) be applied to any discharge;

2. Application of the antidegradation policy of the ground water quality standards. This policy mandates protecting background water quality and preventing degradation of water quality which would harm a beneficial use or violate the ground water standards; and

3. Establishing numeric and narrative criteria for the protection of human health and welfare in the ground water quality standards.

Numeric ground water criteria (maximum contaminant concentrations) are based on drinking water quality criteria. Applicable criteria concentrations are listed below:

Table 2: Ground Water Quality Criteria

Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
Total Coliform Bacteria	1 Colony/100 mL
Toxics	No toxics in toxic amounts

The intent of the ground water quality standards is to protect background water quality to the extent practical, rather than to allow degradation of ground water quality to the criteria. The procedures for estimating background water quality are contained in the Guidance Document for Implementing the

Ground Water Standards (Ecology, 1996). Background water quality is defined as the 95 percent upper tolerance interval with a 95 percent confidence.

Total dissolved solids concentrations in the proposed discharge appear to have the potential to exceed groundwater quality criteria for AKART. Most of the total dissolved solids appear to be volatile solids, but Ecology has not set a policy regarding volatile vs. non-volatile solids. In any case, starches and sugars break down rapidly when applied to soil, accompanied by rapid bacterial growth.

COMPARISON OF LIMITS WITH EXISTING PERMIT ISSUED JUNE 12, 2000

Violations of the limits for iron and manganese were the only technical violations of the existing permit. Since high iron and manganese occur naturally in acidic subsoils under certain conditions, these violations were not taken to be a result of Symon's activities.

After considering the data and the significant changes in the waste water disposal system, it is evident that the imposition of limits in the previous permit was premature. No limits will be applied for this permit period with one exception. The permittee, in his annual irrigation and crop management plan, will propose a limit on applied nitrogen as a mass limit (pounds per acre). This limit should be a limit that will both achieve the goal of zero increase over background and not exceed the groundwater limits.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that groundwater criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

WASTEWATER MONITORING

The monitoring schedule is detailed in the proposed permit under Condition S1. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

CROP MONITORING

The crop is a critical component in many land application systems and is relied upon for removing nutrients, reducing erosion, and maintaining or increasing infiltration rates. Crop monitoring allows a complete mass balance to be calculated to determine the amount of nutrients and salts, which are taken up by the crop and removed each season.

SOIL MONITORING

Soils support crop growth and a biological community, which removes BOD, and other pollutants that are not removed through treatment prior to application or through crop uptake. Soil monitoring is required to assure that excess nutrients and salts are not residing in the soil column, which would be leached to groundwater. This testing allows for a more accurate application rate to be determined and minimizes the leaching potential to groundwater.

Twice a year sampling was selected as before and after the growing season.

GROUND WATER MONITORING

The monitoring of groundwater at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. The Department has determined that this discharge has a potential to pollute the groundwater. Therefore, the Permittee is required to evaluate the impacts on groundwater quality. Monitoring of the groundwater at the site boundaries and within the site is an integral component of such an evaluation.

Constituents of Concern:

Constituents of concern are those contaminants, which are discharged, handled or stored on-site by the facility. These include any contaminants which could potentially impair a beneficial use. These also consist of degradation products or contaminants, which are released or mobilized during chemical reactions in the environment. For Symons Frozen Foods these parameters include: biochemical oxygen demand, total nitrogen (nitrate, total Kjeldahl nitrogen), total dissolved solids, total volatile dissolved solids, and chloride. Total organic carbon, dissolved oxygen, iron, and manganese are also required monitoring parameters since they are contaminants, and indicate the presence of anaerobic conditions caused by excessive loading of oxygen demanding substances.

Major Cations and Anions:

A complete chemical characterization of groundwater quality is essential when making a determination of the impacts a discharge may have on background water quality. The ions are not necessarily measured to determine compliance, but can provide both the facility and the Department with relatively inexpensive, and high quality information regarding the impacts to the environment. Natural groundwater has a distinct chemical composition which is characteristic of the geologic formation. Cations and anions provide a means of identifying background water quality by delineating a signature based on the inorganic constituents. Ionic characterization data can be used to detect water quality changes and trends, which may be attributed to a discharge. Inorganic constituents also provide a check on the reliability of the analyses with a cation/anion balance. Ionic analyses are required to be monitored on a less frequent basis. These analyses provide some of the most meaningful information in terms of evaluating impacts to groundwater quality. The ions that are required to be monitored quarterly in groundwater include: calcium, magnesium, potassium, phosphate, sodium, bicarbonate, carbonate, fluoride and sulfate.

Field Parameters:

Field parameters are analytical methods for groundwater parameters, which can be measured in the field. These include static water level, pH, electrical conductivity, temperature, dissolved oxygen and ferrous iron. These measurements serve several purposes. They can be used to verify when effective well purging has occurred and when groundwater has stabilized to assure that the groundwater sampled is representative of water in the aquifer formation. They can be used as a verification of laboratory measurements and can indicate sample deterioration. Additionally, field parameters are used to detect abnormalities, and they can be indicative of groundwater contamination.

A monitoring network has been established at the facility. The network consists of six shallow monitoring wells that are used to measure water level elevations of the aquifer and to obtain groundwater quality samples. Two of the wells are used to determine compliance with the groundwater quality standards.

This permit requires that the facility install a new monitoring well downgradient of the new application field (Field VII) and substitute monitoring well 7 (MW7) so that it is centrally located downgradient of Field VI. The permit also requires that new wells and any of the existing wells with sediment in their discharge be developed with a surging method and pumping until the discharge is sediment free.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S2 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from the engineering report prepared by Brown and Caldwell and are as follows:

Monthly average flow (max. month):	0.34 MGD
Instantaneous peak flow:	0.40 MGD

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). For significant changes in loadings to the treatment works, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

IRRIGATION AND CROP MANAGEMENT PLANS

The irrigation and crop management plan is required to support the permit application, and operations and maintenance manual. This plan shall include a consideration of wastewater application at agronomic rates and should describe and evaluate various irrigation controls. The Permittee has asserted that this wastewater contains relatively harmless dissolved solids in the form of starches. After two sampling events, total volatile dissolved solids do not seem to be excessive in the ground water.

GROUND WATER QUALITY EVALUATION (HYDROGEOLOGIC STUDY)

In accordance with WAC 173-200-080, the permit requires the Permittee to prepare and submit annual hydrogeologic studies for the Department's approval in 2006, 2007, and 2008. These hydrogeologic studies will be based on soil and hydrogeologic characteristics and be capable of assessing impacts on groundwater. A summary hydrogeological study for the permit period will be submitted on or before April 15, 2009.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations, and have been standardized for all industrial waste discharge to groundwater permits issued by the Department.

Condition G1 requires responsible officials, or their designated representatives, to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and

transfer. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for a period corresponding to the permit renewal schedule established for this watershed but not exceeding 5 years.

REFERENCES FOR TEXT AND APPENDICES

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State University, November, 1981. Laboratory Procedures - Soil Testing Laboratory. 38 pp.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the rest of this fact sheet.

Public notice of application was published on March 20, 2004 and March 27, 2004, in *The Chronicle* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on _____, in *The Chronicle* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 4:30 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Region - Water Quality
P.O. Box 47775
Olympia, WA 98504-7775.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6285, or by writing to the address listed above.

This permit was written by Gary Anderson P.E.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--RESPONSE TO COMMENTS